



Cork City North Sustainable Transport Corridors (STC) Scheme - Dunkettle STC Proposed Ground Investigation Works: Screening for Appropriate Assessment

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1. Introduction

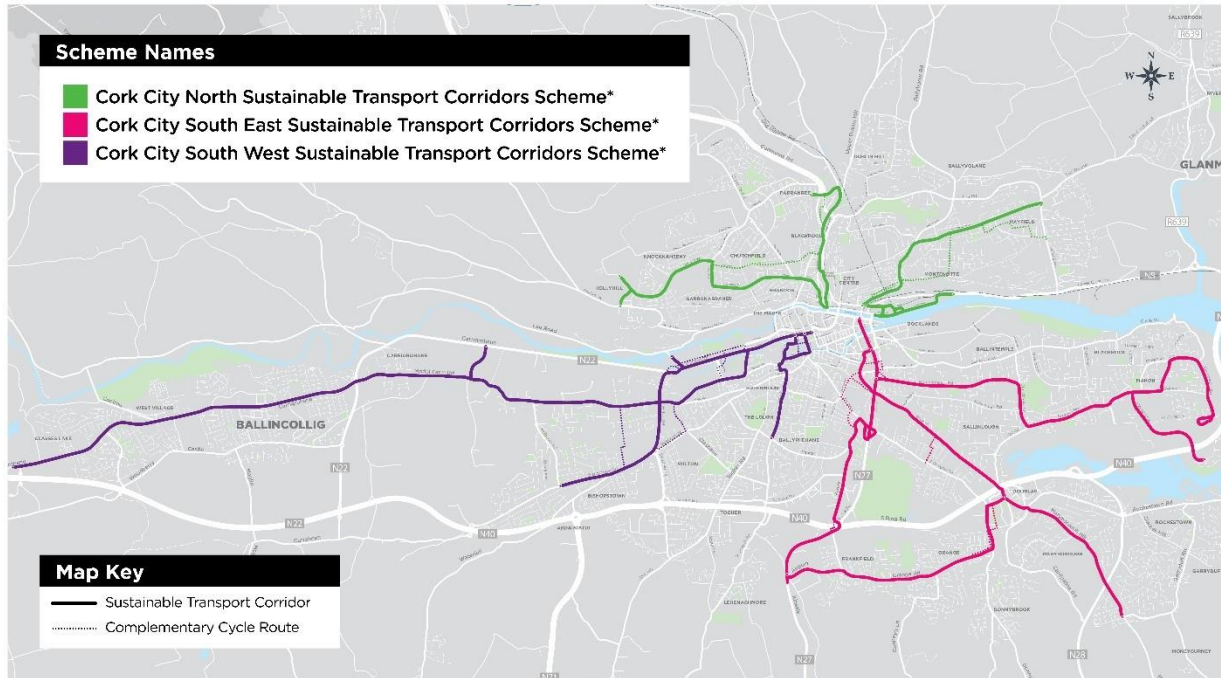
1.1 Background and overview

BusConnects is the National Transport Authority's (NTA) programme to greatly improve bus services in Cork and other cities. It is a key part of the Government's policies to improve public transport and address climate change including the National Development Plan (2021-2030) (Government of Ireland (GoI), 2021), the Cork Metropolitan Area Transport Strategy 2040 (NTA, 2020), the Climate Action Plan 2024 (Department of the Environment, Communications and Climate, 2024) and the National Planning Framework 2040 (GoI, 2019).

The aim of BusConnects Cork is to deliver an enhanced bus system that is better for Cork city, its people and the environment. BusConnects Cork is designed to provide a better, more reliable and more efficient bus service for everyone in addition to providing safe cycling and enhanced pedestrian facilities along key routes.

One of the key elements of BusConnects Cork is investment in 11 Sustainable Transport Corridors (STCs) that will have continuous bus priority – generally, a continuous bus lane in each direction, but other arrangements may be used in constricted locations. This will remove delays currently being experienced by the bus system and its users across Cork City.

Following consideration of the 11 STCs, due to the geographical association and functional interdependence between certain of those STCs, the 11 STCs have been combined into three standalone STC schemes. These are shown in Image 1.1. For completeness, there is neither a geographical association nor functional interdependence between any of the three standalone schemes.



* Subject to Design Development

Image 1.1: Indicative Overview of BusConnects Cork Sustainable Transport Corridor Schemes.

To inform the design and assessment of the proposals for the three standalone BusConnects Cork STC Schemes, ground investigation (GI) works are required.

This report is in relation to the proposed GI works required to inform the design proposals for a shortened Dunkettle STC, which forms part of the Cork City North STC Scheme, for the reasons set out in Section 1.2 below. The proposed GI works are located in Cork city centre, in the North Docklands, immediately to the north of the River Lee. They run parallel with (and to the north of) Horgan's Quay, within predominantly Irish Rail land which is bounded by Lower Glanmire Road to the north (refer to Appendix A for site photographs).

1.2 Purpose of this report

The NTA has carried out a Screening for Appropriate Assessment of the proposed GI works required to inform the design proposals for 10 of the 11 STCs making up the Cork City North STC Scheme, the Cork City South East STC Scheme, and the Cork City South West STC Scheme and has determined that those proposed GI works are not likely to have a significant effect on any European Sites, in view of the sites' conservation objectives.

At the time of undertaking that Screening for Appropriate Assessment, as mentioned in that AA Screening Report, it was anticipated that the proposed GI works for the Dunkettle STC would be delivered at a later time and be subject to a separate AA screening process, as those works as envisaged at that time were more significant in scope and included certain ground investigations within the maritime area, requiring an application to the Maritime Area Regulatory Authority for a Maritime Usage Licence.

Following further design development resulting in a shortened Dunkettle STC, the proposals for the GI works have been refined and an application for a Maritime Usage Licence is not required as there are now no proposed GI works within the Maritime Area. While the proposed GI works required for the shortened Dunkettle STC are now limited to the scope and extents shown on the GI Proposals Plan in Appendix C, out of an abundance of caution and to ensure that consistent consideration is undertaken of the proposed GI works across all 11 STCs which have now been combined into the three standalone STC Schemes, this AA Screening Report has been prepared to consider and assess whether, on the basis of objective scientific information, the proposed GI works required in respect of the shortened Dunkettle STC, individually or in-combination with other plans or projects, are likely to have a significant effect on any European site(s) in view of the sites' conservation objectives.

This report therefore presents the information required for the Competent Authority to undertake Screening for AA for proposed GI works for the shortened Dunkettle STC which now forms part of the Cork City North STC Scheme as shown on the GI Proposals Plan in Appendix C. It provides an assessment of the potential for Likely Significant Effects (LSEs) of the proposed GI works at the shortened Dunkettle STC on European sites within a Zone of Influence (Zol), as defined by the source-pathway-receptor model (OPR, 2021) (refer to Appendix B, Figure B1 for the location of European Sites in relation to the Dunkettle STC).

1.3 Appropriate Assessment Requirements

1.3.1 Introduction

The purpose of AA Screening is to identify whether activities associated with plans or projects, either acting individually or in-combination with other plans or projects, result in LSEs on any European sites. All potential effects between activities associated with the plans or projects and the ecological components of European sites must be considered. This includes potential effects on mobile species, notably birds, mammals, invertebrates, and migratory fish using functionally linked land outside the designated boundary of the European site.

Appropriate Assessment sits within a legislative context which is briefly set out below, along with an overview of the key stages of the AA process.

1.3.2 Legislative Context

Habitats and species of European importance are provided legal protection under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as amended) (hereafter referred to as the Habitats Directive) and Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (as amended) (hereafter referred to as the Birds Directive). The Habitats Directive protects habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as the Natura 2000 network (hereafter referred to as European sites, as the term Natura 2000 network was replaced by 'European site' under S.I. No. 473 of 2011 – European Union (Environmental Impact Assessment and Habitats) Regulations 2011). European sites comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

The Habitats Directive has been transposed into Irish law by the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011) (as amended). Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects.

Article 6(3) establishes the requirement for AA:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in-combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site’s conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

Article 6(4) states:

“If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.”

Further, Regulation 42(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) provides that “...screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.”

1.3.3 Case law

In addition to the above legislation, a number of cases have been brought to both the national and European courts in relation to the AA process. Therefore, relevant case law, European Court of Justice rulings and EC publications have also been considered in the preparation of this Screening for AA.

Relevant case law includes rulings from the European Court of Justice (ECJ) e.g. the Waddenzee Judgement (ECJ case C-127/02), which established that an LSE is one that cannot be ruled out on the basis of objective information. This is underpinned by the precautionary principle which is enshrined in law in the Habitats Directive, and the test of something as being “beyond reasonable scientific doubt”, as presented in the Waddenzee Judgement. The Sweetman case (ECJ case C-258/ 11) reinforced and further refined the Waddenzee Judgement ruling that “the question is simply whether the plan or project concerned is capable of

having an effect. It is in that sense that the English 'likely to' should be understood". The People Over Wind Judgement (ECJ case C-323/17) clarifies the stage in the HRA process when mitigation measures can be taken into account when assessing impacts on a European site. The ruling is that: "...in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site".

1.3.4 Stages in Appropriate Assessment

The purpose of AA Screening is to identify whether activities associated with plans or projects, either acting individually or in-combination with other plans or projects, result in LSEs on any European sites.

If the prospect of LSEs occurring cannot be excluded on the basis of objective information, the plan or project is taken forward to the next stage of the process, Stage 2 AA. At Screening, the burden of evidence is to show, on the basis of objective information, and beyond reasonable scientific doubt, that the proposed plan or project will have no LSEs on a European site. If LSEs cannot be excluded, or it is uncertain, it would trigger the need for AA.

An overview of the AA process is outlined below:

- Stage 1 Screening: Screening determines whether an AA is required by determining if the project or plan is likely to have a significant effect on any European site(s) either individually or in-combination with other plans or projects, in light of the site's conservation objectives;
- Stage 2 AA: If the screening has determined that AA is required, the Competent Authority then considers the effect of the project or plan on the integrity of the European site(s). Specifically, it must be determined if the project or plan will adversely affect the integrity of a European site(s) either individually or in-combination with other plans and projects in view of the conservation objectives of the site(s). Where potential adverse effects on site integrity (AESI) are identified, mitigation measures are proposed to avoid adverse effects, as appropriate. For projects, the AA process is documented within a Natura Impact Statement (NIS).

Following AA, including mitigation proposals, if AESI remain, or uncertainty remains and the project/plan is to be progressed, an Assessment of Alternative Solutions is required under the provisions of Article 6(4) of the Habitats Directive. This process examines the alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site. If no alternatives exist, or all alternatives would result in adverse effects on the integrity of a European site, then if the project/plan is to be progressed, the process moves to the next stage.

Where an Assessment of Alternative Solutions fails to identify any suitable alternatives, for a project or plan to be progressed it must demonstrate that there are Imperative Reasons for Overriding Public Interest (IROPI).

If, following an assessment of IROPI, it is deemed that the project or plan can proceed, compensatory measures must be secured to maintain the coherence of the European site network despite adverse effects to the integrity of the site(s).

1.4 Authors Qualifications and Expertise

The first draft of this report was prepared by Sophie King, with subsequent minor amendments by Zoe Connolly and check and review by Russell Cryer. All authors and reviewers have the necessary qualifications and experience in preparing AA Screening reports:

Sophie King is an Ecologist with six years of experience in the ecology and conservation industry, including more than three years' experience in ecological consultancy. Sophie holds a MSc degree in Conservation and Biodiversity from Lancaster University and a BSc degree in Conservation Biology and Ecology from the

University of Exeter. Sophie has carried out extensive field surveys both protected species and habitats, as well as completing AA screenings and contributing to Environmental Impact Assessments (EIA).

Zoe Connolly is an Associate Director of Ecology and Chartered Ecologist with over 19 years of experience in ecological consultancy working on large infrastructure projects. She has been the lead ecologist for ecological input into key client frameworks and complex infrastructure projects including planning, co-ordinating and overseeing delivery. Zoe is experienced in undertaking and reviewing Habitat Regulations Assessments, both in the UK and Ireland.

Russell Cryer is a Chartered Environmentalist and has over 20 years of experience of supporting infrastructure projects in ecological assessment, specialising in Appropriate Assessment. Before this, he spent 18 years developing land management, team/project management and stakeholder engagement skills in the nature conservation field. Russell's experience has been in the voluntary, public, and private sectors and has included infrastructure projects including new nuclear build, trunk roads, pipelines, electricity transmission and waste management facilities, as well as development of decision-making processes and strategic assessments in the government sector.

2. Assessment Methodology

2.1 Introduction

This section of the report outlines the assessment methodology which has been employed in this AA Screening report. There are a number of guidance documents which inform the preparation of the appropriate assessment, and these are listed below.

2.2 Guidance Documents

This Screening for AA was undertaken taking cognisance of the following guidance:

- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities (Department of Environment, Heritage and Local Government (DoEHLG), 2010).
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2001).
- Communication from the Commission on the Precautionary Principle (EC, 2000).
- Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission (EC, 2007).
- Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2019).
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive (EC, 2021).
- Office of the Planning Regulator (2021). Appropriate Assessment Screening for Development Management. OPR Practice Note PN01.

2.3 Screening Methodology

2.3.1 Overview

The guidance documents outlined above set out the process for carrying out AA, the first stage of which is referred to as Screening. Steps required for screening include the following:

- Determination of whether a project or plan is directly connected with or necessary to the conservation management of any European sites.
- Description of the details of the project/ plan (including the site characteristics/plan area).
- Description of the characteristics of European sites that might be affected (i.e., identification of qualifying interest (QI) and conservation objectives (CO) that could be affected as a result of progressing the project/plan.
- Assessment of LSEs on relevant European sites in view of the sites' conservation objectives, either individually or in-combination with other plans and projects.
- Presentation of a screening assessment which should determine if the project/plan individually or in-combination with other plans and projects could undermine the conservation objectives of the site(s) and give rise to LSEs. The assessment of LSEs must be undertaken in the absence of mitigation measures.

2.3.2 Potential pathways used in the assessment

When assessing the proposed GI works, the 'source-pathway-receptor' model is applied taking consideration of all potential impact pathways connecting elements of the proposed GI works to European sites in view of their conservation objectives.

The source-pathway-receptor conceptual model is a standard tool in environmental assessment to identify and assess potential impact pathways. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the pathway means that there is no likelihood for the effect to occur (e.g., no potential for LSEs).

Potential impact pathways assessed are:

- Habitat loss;
- Habitat degradation – changes in water quality;
- Habitat degradation – changes in air quality;
- Habitat degradation – hydrological changes;
- Habitat degradation – hydrogeological changes;
- Habitat degradation – spread of invasive species;
- Disturbance of species; and
- Mortality.

The source-pathway-receptor model is focused solely on the QIs for which European sites are designated as per the latest conservation objectives from the National Parks and Wildlife Service (NPWS) website.

AA screening requires consideration of a range of potential effect pathways. The range of potential effect pathways to be considered for the proposed GI works on the Dunkettle STC has been developed and is outlined in Table 2.1. The source/pathway/receptor model, the Zones of Influence (Zoi) and the extents of sensitivity of QIs for each potential impact pathway used in this assessment are also defined in Table 2.1.

Table 2.1 Potential effect pathways

Pathway name	Source / pathway / receptors model	Zone of Influence	Extent of sensitive receptors
Habitat loss	<p>Where a project is providing new infrastructure or permanent change of habitat and could result in direct loss of QI habitat or supporting habitat for QI species in a European site, or functionally linked land associated with mobile QI species outside the boundaries of European sites.</p> <p>Construction activities including temporary works areas and access routes of the project could result in the temporary loss of habitats before reinstatement after construction is completed, potentially affecting QI habitat or supporting habitat for QI species in a European site, or functionally linked land associated with mobile QI species outside the boundaries of European sites.</p>	<p>The Zol assessed is within the footprint of the proposed GI works. Physical loss of habitat is only possible within the boundary of a European site, or within an area of functionally linked land habitat outside of the European site.</p>	<p>QI habitats are sensitive within the boundary of their designated site. Supporting habitats of QI species are sensitive within the boundary of their designated site. Functionally linked habitats of QI species are sensitive where suitable habitat is present within the range of the QI species from their designated site.</p>
Habitat degradation – changes in water quality	<p>Construction activities and changes in operational traffic/drainage can release oils, chemicals, heavy metals, silt etc. This can directly affect QI species or habitats or affect them indirectly through loss of aquatic prey species, or through changes in their habitats.</p>	<p>The Zol assessed is within the footprint of the proposed GI works or within hydrologically linked areas (to the point where effects would be imperceptible such as where a watercourse meets open sea). Pollutants can travel along hydrological linkages such as watercourses to a considerable distance from works.</p>	<p>QI habitats are sensitive within the boundary of their designated site. Supporting habitats of QI species are sensitive within the boundary of their designated site. Functionally linked habitats of QI species are sensitive where suitable habitat is present within the range of the QI species from their designated site.</p>
Habitat degradation – changes in air quality	<p>Construction plant and vehicles emit exhausts containing pollutants that can deposit on QI habitats, which can cause direct toxic effects on QI species and habitats or degradation of QI habitat.</p>	<p>The Zol assessed is within 200 m of the footprint of the proposed GI works. Pollutant deposition from vehicles is thought to occur in insignificant amounts beyond 200 m from the source</p>	<p>QI habitats are sensitive within the boundary of their designated site. Supporting habitats of QI species are sensitive within the boundary of their designated site. Functionally linked habitats of QI species are sensitive where suitable habitat is present within the range of the QI species from their designated site.</p>
Habitat degradation – hydrological changes	<p>In-stream structures or changes to drainage from the project can cause changes in hydrology, which can alter water volumes and flows, which can in turn change the wetness of habitats or cause erosion or deposition of materials.</p> <p>Such changes can affect QI habitats or supporting and functionally linked habitats of QI species.</p>	<p>The Zol assessed is within surface water catchments that the footprint of the proposed GI works. Surface water changes can occur within catchments as changes in one location affect other locations via watercourses for example.</p>	<p>QI habitats are sensitive within the boundary of their designated site. Supporting habitats of QI species are sensitive within the boundary of their designated site. Functionally linked habitats of QI species are sensitive where suitable habitat is present within the range of the QI species from their designated site.</p>

Table 2.1 Potential effect pathways

Pathway name	Source / pathway / receptors model	Zone of Influence	Extent of sensitive receptors
Habitat degradation – hydrogeological changes	Construction activities such as groundworks, excavations and drainage and permanent changes to drainage and abstraction can cause changes to groundwater volumes and flows, which can change the hydrogeology of QI habitats and supporting or functionally linked habitats of QI species.	The Zol assessed is within groundwater catchments that the footprint of the proposed GI works. Groundwater changes can occur within catchments as changes in one location affect other locations.	QI habitats are sensitive within the boundary of their designated site. Supporting habitats of QI species are sensitive within the boundary of their designated site. Functionally linked habitats of QI species are sensitive where suitable habitat is present within the range of the QI species from their designated site.
Habitat degradation – spread of invasive species	Construction activities can cause the spread of invasive species already within the construction site (through transfer on plant or within materials moved during earthworks), or by importing materials from outside the construction site (on the wheels of plant or delivery vehicles, etc). This can cause the degradation of QI habitats or supporting and functionally linked habitats of QI species.	The Zol assessed is within the footprint of the proposed GI works. The spread or importing of invasive species can only occur within the construction site.	QI habitats are sensitive within the boundary of their designated site. Supporting habitats of QI species are sensitive within the boundary of their designated site. Functionally linked habitats of QI species are sensitive where suitable habitat is present within the range of the QI species from their designated site.
Disturbance of species	Construction activities could result in disturbance of QI species through changes in noise, vibration, movement (of people and/or vehicles) and lighting. Disturbance may lead to the abandonment of breeding, foraging or resting sites by QI species, potentially resulting in increased energy expenditure, reduced fitness and inability to complete lifecycle stages.	The Zol assessed is within the footprint of the proposed GI works, within 300 m of the proposed GI works. This is considered to be an appropriate distance to assess disturbance as QI species are unlikely to be significantly disturbed beyond these distances.	QI species are sensitive within the boundary of their designated site (in supporting habitat) or within functionally linked habitats where suitable habitat is present within the range of the QI species from their designated site.
Mortality	Mortality of individuals of QI species could occur directly through killing of individuals by construction works or indirectly through death of individuals on roads that have to cross roads because their existing commuting routes along watercourses have been severed or as a result of pollution entering the watercourse.	The Zol assessed is within the footprint of the proposed GI works. Direct mortality from construction activities can only occur within the construction footprint. Indirect mortality can occur near to works at watercourses that sever species commuting routes.	QI species are sensitive within the boundary of their designated site (in supporting habitat) or within functionally linked habitats where suitable habitat is present within the range of the QI species from their designated site.

2.4 Baseline Characterisation

2.4.1 Introduction

Baseline characterisation of the existing environment in which the proposed GI works are situated was undertaken. This involved desk-based review of existing available information and undertaking a site visit and wintering bird surveys, which are described below. Only species records and surveys relevant to the QI of

European sites identified to be within the Zol of the proposed GI works are presented below (see Table 5.1 for the identification of relevant European sites).

2.4.2 Desk review

The following key resources were analysed to inform the baseline description of the sites and surrounding environment:

- Aerial imagery (Bing, Google Earth, ESRI).
- Environmental Protection Agency (EPA) rivers and water quality data Water Framework Directive (WFD) status online at <https://gis.epa.ie/EPAMaps/> (accessed October 2024).
- Mapping of European site boundaries available online at www.npws.ie (accessed October 2024).
- National Parks and Wildlife Service (2019a). The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.
- National Parks and Wildlife Service (2019b). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.
- National Parks and Wildlife Service (2019c). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill.
- Online data available on Natura 2000 sites as held by the NPWS from www.npws.ie including: the Natura 2000 network Data Form; Site Synopsis; Generic Conservation Objective data.
- Protected and invasive species data from the National Biodiversity Data Centre (NBDC) online at <http://www.biodiversityireland.ie/> (accessed October 2024).

2.4.3 Site visit

A subcontractor, MKO, was appointed by Jacobs to undertake habitat and protected species surveys on behalf of the NTA in relation to the Dunkettle STC.

Baseline ecological surveys were undertaken on: 16 August 2023 by Sara Fissolo (B.Sc.); 17 August 2023 by Nora Szijarto (B.Sc.) and Sara Fissolo; 30 August 2023 by Stephanie Corkery (B.Sc., M.Sc.) and Nora Szijarto; and 20 and 21 September 2023 by Pádraig Desmond (B.Sc.) of MKO. Nora, Sara, Stephanie and Pádraig possess the relevant academic qualifications and are competent in undertaking the ecological surveys in which they were involved. At this time, habitats within the site were assessed for their potential to support rare or protected species and/or qualifying interests (Annex I habitats or Annex II species) associated with European sites.

The site walkover and assessment of protected species and habitats and/or invasive species was undertaken in line with the following guidelines and informed this Screening for AA:

- A Guide to Habitats in Ireland. The Heritage Council (Fossitt, 2000).
- Article 17 reports (NPWS, 2019a, 2019b, and 2019c).
- CIEEM Good Practice Guidance for Habitats and Species (CIEEM, 2021).
- CIEEM Guidelines for Preliminary Ecological Appraisal. Second Edition (CIEEM, 2017).
- CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018).
- Transport Infrastructure Ireland (TII) The Management of Invasive Alien Plant Species on National Roads, Standard (TII, 2020a).

- Transport Infrastructure Ireland (TII) The Management of Invasive Alien Plant Species on National Roads, Technical Guidance (TII, 2020b).

2.4.4 Wintering bird surveys

Monitoring surveys were undertaken with reference to the good practice guidance survey methodology: British Trust for Ornithology (BTO) Wintering Farmland Bird Survey methodology (Gillings *et al.*, 2008) and generic wintering bird monitoring methods detailed in Bird Monitoring Methods (Gilbert *et al.*, 1998).

Six survey visits were undertaken between October 2023 and March 2024. Surveys were undertaken between dawn and dusk (approximately 8am and 5pm depending on daylight hours) and visits were planned so as to avoid adverse weather conditions such as heavy rain and strong wind, as this can reduce bird activity (Gilbert *et al.*, 1998). Surveys were carried out with visits alternating between high tide and low tide each month. The survey visits were undertaken by experienced MKO ornithologists.

The wintering bird surveys were designed to inform the proposals for the BusConnects Cork STCs, comprising sixteen vantage points and eight transects. The vantage points and transects were completed by two ornithologists over one day for each survey visit, surveying from a predetermined points and pre-determined transect routes at a slow walking pace.

For the purpose of this AA Screening assessment, relevant vantage points and transects within 1 km of the proposed GI works comprise:

- Transect 1, which is located on the northern bank of the River Lee in Cork city centre, extending along Lower Glanmire Road. The proposed GI works are located approximately 250 m west of this transect route;
- Transect 2, which is located on the northern bank of the River Lee in Cork city centre, extending along Horgan's Quay. The proposed GI works are located immediately north (closest location is 20 m north) and parallel with this transect route;
- Vantage point 10, located on the northern bank of the River Lee in Cork city centre, immediately to the west of Clontarf Bridge. The proposed GI works are located approximately 650 m east of this vantage point at their nearest point; and
- Vantage point 11, located on the northern bank of the River Lee in Cork city centre, immediately to the east of Clontarf Bridge. The proposed GI works are located approximately 600 m east of this vantage point at their nearest point.

Appendix B, Figure B2 provides a plan showing the locations of Transect 1, Transect 2, Vantage Point 10 and Vantage Point 11.

Surveyors recorded all birds heard or seen with the aid of binoculars. Registrations, which are records of individual birds (identified either by call, song or visually), were recorded on field maps using the BTO codes. Care was taken to avoid double counting. Longer periods of observations were made in areas of high bird activity.

On each of the survey visits, the following details were recorded:

- Bird locations;
- Bird numbers, species; and
- Bird behaviour (e.g. in a flock or in flight).

2.4.5 Identifying Potentially Functionally Linked Habitat

The baseline characterisation methodology includes the identification of any functionally linked land within the Zol of the proposed GI works. During the screening methodology, an assessment of LSEs on any identified functionally linked land was undertaken.

Functionally linked land is a term used to describe areas of land or sea occurring outside a designated site which is considered to be critical to, or necessary for, the ecological or behavioural functions in a relevant season of a qualifying feature for which a SAC, SPA or Ramsar site has been designated (Bowland Ecology, 2021). A desk study was undertaken to review the potential for functionally linked habitat for QI bird species in proximity of the proposed GI works. This included comparing the baseline ecological conditions for each of the QI bird species (desk study and survey data) with the species numbers presented in the designated site citations, and identifying land used by QI bird species which met the population threshold for LSE described in Section 2.4.6.

2.4.6 Population Thresholds of QI Species

Where there are areas outside of a designated site which support more than 1% of an individual SPA's population of any QI species, this is considered to be a significant proportion of the population and therefore any potential impacts on them may cause LSEs.

During the baseline characterisation, a 1% population threshold was used to calculate LSEs on QI bird species which utilise habitats within the Zol of the proposed GI works for foraging and roosting. The calculation was carried out using available population data for waterbird species data taken from the Conservation Objectives Supporting Documents of SPAs, which are available through NPWS website. The waterbird population data for the Cork Harbour SPA is derived from Irish Wetland Bird Surveys (I-WeBS) undertaken between the period 1994/95 to 2012/13, covering a total of 21 count subsites, and regularly monitoring approximately 2,961ha of the SPA (NPWS, 2014a). The peak count data used for the 1% population threshold calculation is taken from the baseline data, the 5-year mean peak for the period 1995/96 – 1999/00 (from the aforementioned document), and the data collected from the wintering bird surveys carried out by MKO ecologists.

3. Description of Proposed GI Works and Site Characteristics

3.1 Overview

This AA screening report has been undertaken in relation to the proposed GI works for the Dunkettle STC. The proposed GI works will inform the geotechnical design and general baseline conditions.

Descriptions of the proposed GI works are outlined below, as is a description of the standard environmental management measures which are intrinsic to the proposed GI works. These standard environmental management measures are required for legal compliance irrespective of whether any European site may or may not be affected. As such, they are not considered 'mitigation measures' as defined under Section 1.3.3, Stages of AA.

The specific locations of the proposed GI works are presented in the Proposed Ground Investigation Plan (refer to Appendix C). The proposed GI works will include a series of:

- Non-intrusive PAS 128 Geophysical surveys of all positions prior to breaking ground (as a means of buried services check);
- Breaking out of areas of hardstanding to facilitate boreholes/trial pits from the base of the hardstanding. It is anticipated that breaking out could be required at all exploratory locations;
- Boreholes utilising sonic resonance drilling. Boreholes are proposed at six locations;
- Machine excavated trial pits. Trial pits are proposed at six locations.

The proposed GI works are predominantly located within Irish Rail land, in areas which are already disturbed by significant volumes vehicular/construction traffic. The proposed GI works are to be located on areas of hardstanding, typically private roads or compacted granular soils within Irish Rail land. Works areas will be reinstated to their original state as far as practical, which will may involve replacement of road surfaces.

Note that whilst this AA screening considers current available information regarding the proposed GI works, a worst case is presented in terms of timing, duration and scope of works proposed.

There may be minor changes to the proposals to allow for micro-siting of boreholes or pits in the most appropriate locations, taking account of local physical constraints and to optimise the data obtained. Should the findings of the proposed GI works identify a potential issue for design (such as, poor ground), there may be a necessity for additional GI works in the area. The following assessment takes this into account and presents a realistic worst-case assessment.

3.2 Description of the proposed GI works

The proposed GI works for the Dunkettle STC are required to determine the condition and properties of the ground strata to inform the engineering design and environmental assessment. The proposed GI works will utilise a number of techniques to ascertain the required information, and these techniques are described below. Information is also provided on the standard environmental management measures which will be implemented.

3.2.1 Geophysical surveying

Non-intrusive, PAS 128 geophysical surveys are proposed at all 12 exploratory hole locations before breaking ground, as means of buried services detection. The geophysical methods used will consist of:

- **Ground Penetrating Radar (GPR) surveying:** electromagnetic waves at radar frequencies are transmitted into the ground. GPR surveys may be undertaken using a radar antenna that can be handheld, pulled across the ground or pushed on a kart (similar to a lawn mower);

- **Electromagnetic Locating (EML) surveying:** detection of buried utilities via a hand-held receiver using electromagnetic and radio frequency signals that are present in metallic utilities as a result of current flow or re-transmitted low frequency radio signals (passive EML). Signals can also be induced from a transmitter at ground surface, by direct connection from a signal generator or from a sonde or tracing wire introduced into a pipe or duct (active EML).

PAS 128 surveys are expected to be completed within one to two days.

3.2.2 Breaking out of surface hardstanding

As the site is located within Irish Rail land, it is anticipated that areas of hardstanding (such as concrete or bituminous paving) at or near surface may be present and will be required to be broken out to allow the boreholes and trial pits to be extended into the underlying soils. This shall be done mechanically and will likely consist of a handheld or surface mounted saw with a circular diamond blade mounted on a spindle and powered by an engine/motor. A minimal amount of water will likely be used during the cutting to prevent the apparatus from overheating and to suppress dust.

The size of the cutting will depend on the method of investigation at each location. Areas are defined in Sections 3.2.3 and 3.2.4 below. It is anticipated that breaking out will take between 1 to 2 hours to complete per location and that it may be required at all exploratory hole locations.

3.2.3 Boreholes

Overall, there are six proposed boreholes. Refer to the GI plan in Appendix C for proposed locations. An estimated maximum borehole depth of 8 m has been identified in the GI scope. However, conditions encountered at specific borehole locations could require that individual boreholes need to be taken slightly deeper.

Sonic resonance drilling is proposed at six borehole locations. All borehole positions will commence with a hand dug inspection pit to check for buried services, typically up to 1 m x 1 m in profile and excavated to a depth of 1.2 m. The borehole will then advance from the base of the inspection pit. Sonic resonance drilling employs adjustable high-frequency vibrations of generally between 50 Hz and 150 Hz to advance drilling tools in soil and rock. The drill head contains an oscillator which generates resonant energy that is transferred down the drill string to the drill bit. Installing steel casing in the hole as drilling advances is an integral part of the method. The rig to power the drilling will be fuelled by diesel. Each borehole sample taken will typically be in 1.5 m lengths. Soil and rock samples can be removed from sampling tools using mechanical aids such as clamps, pipe wrenches, and mole grips. At each location, the rig is typically in place for a few days per location, depending on the depth of the sampling and the thickness of the substrate. However, it is anticipated that, due to the relatively shallow depth being investigated, the rig will be in place for one day per location.

On completion, the boreholes will be installed with monitoring equipment – for example, to monitor water levels. It is anticipated that where an installation is to remain in place, the only thing visible will be a small cover, level with the ground. However, should it be requested by the landowner, standing covers may be utilised to ensure that installation can easily be identified.

3.2.4 Mechanical trial pitting

There are six proposed trial pits, indicative locations are illustrated on the GI plan in Appendix C. Exact locations of trial pits are to be determined following a review of the geophysical survey.

Trial pits will be dug by mechanical means using an excavator. These are dug to investigate soil conditions, conduct in situ tests and collect samples for subsequent laboratory testing. Where pits are hand dug, they are typically up to 1 m x 1 m in profile and excavated to a depth of 1.2 m. Where excavation is by mechanical means, typically, a 1 x 4 m pit will be dug to a depth of 2-4 m. This enables observation of the profile of the

ground from the surface and samples to be retrieved for testing. The contractor will be required to reinstate positions to their original state as far as practical. The trial pits are expected to be excavated over a period of one to two days.

3.2.5 Programme and timing of works

It is understood that the proposed GI works are expected to commence from Autumn 2024. Locations of the proposed GI works are shown on the GI Plan in Appendix C.

The overall duration of the proposed GI works programme has yet to be finalised but is likely to be no more than two weeks in duration. The programme will be set on a number of factors, including capability and availability of GI contractors. The durations of the GI techniques detailed above will be dependent on the GI contractor, and the number of rigs, excavators and plant they can operate simultaneously.

There are no daylight hours working restrictions on the proposed GI works.

3.2.6 Site compound and staff welfare units

Temporary staff welfare units may be required for the duration of the proposed GI works. The location and size of the welfare unit will be the Contractor's responsibility and will be selected by the appointed Contractor. The welfare units and access routes will be located on suitable land adjacent to the proposed GI works, of low ecological value to ensure no LSE are caused by their operation.

3.2.7 Standard environmental management measures during the proposed GI works

A suitably competent Ecologist shall be appointed as an Ecological Clerk of Works (ECow) by the Contractor prior to the commencement of the proposed GI works to advise on ecological issues and ensure compliance with legislation and best practice guidance.

A Method Statement for Environmental Protection will be produced prior to the commencement of work. The statement will include measures relating to:

- Water will be used as necessary to suppress significant volumes of dust at GI intrusive points and along access routes if required and as agreed with the appointed Investigation Supervisor.
- Surface water runoff and pollution from the proposed GI works will be controlled as necessary by bunding, sheeting and/or sandbags, and by hay bales or other silt/filter fences as agreed with the appointed Investigation Supervisor.
- If fuel, lubricants or other chemicals will be stored within 30 m of a waterbody, they will be suitably stored on a suitable surface, such as a plant nappy.
- If refuelling of plant and vehicles must take place within 10 m of a waterbody, this will be conducted on an appropriate surface such as a plant nappy, with spill kits and oil/fuel soak up granules present.
- Storage areas, machinery depots and site offices shall not be located within 50 m of waterbodies.
- Surface water shall not be discharged directly into any river, stream, or any other waterbody.
- In wet or soft ground appropriate matting will be required for access by vehicles, plant and equipment. (Matting may be rotated to reduce the total amount required.)
- Vehicles and plant shall be properly maintained. Any fuel or oil drips will be monitored on an ongoing basis and addressed immediately.
- Spill kits, plant nappies, and oil/fuel soak up granules will be present onsite to deal with any incidents, and to stop a spill from reaching drains, watercourses, or sensitive areas. Contaminated materials from a

spillage incident need to be disposed of as hazardous waste. Any spill incidents will be recorded by the Investigation Supervisor and ECoW.

3.2.8 Biosecurity measures

During the proposed GI works the GI Contractor will take all reasonable steps and exercise all due diligence to avoid allowing or causing the spread or dispersal of invasive non-native species (INNS). This will include appropriate construction, handling, treatment and disposal procedures to prevent the spread of INNS in line with recognised best practice. The GI Contractor shall document all positive steps or actions taken to avoid allowing or causing the spread or dispersal of INNS. The biosecurity measures are required for legal compliance irrespective of whether any European site may or may not be affected.

4. Baseline Characterisation

The results of the desk-based review and relevant field surveys are presented in the following sections. The habitat classification codes (Fossitt, 2000) are included in brackets after habitat descriptions where appropriate.

4.1 Overview of the Baseline Environment

The proposed GI works are to be located on hardstanding (Fossitt Habitat type BL3 Buildings and Artificial Surfaces) and on spoil/bare ground (Fossitt Habitat type ED2) on predominantly Irish Rail land immediately north of Horgan's Quay close to Cork city centre. The Invasive Non-Native Species (INNS) butterfly bush (*Buddleja davidii*) has been recorded sporadically in this area.

The Kent railway station and associated railway line are located to the immediate west and north of the proposed GI works respectively. The surrounding area is characterised by a mix of industrial and residential buildings (BL3), and roads, pavements, car parks and dockings along Horgan's Quay which are categorised as artificial surfaces (BL3). The River Lee (CW2 Tidal River) is located approximately 20 m south of the proposed GI works at the closest point and is separated from them by a high wall.

4.2 European sites

There are no European sites within the footprint of the proposed GI works. European sites within proximity of the proposed GI works for the Dunkettle STC are presented in Table 4.1. Refer to Appendix B, Figure B1 for location of the European sites in relation to the proposed GI works.

Table 4.1 European sites within proximity of the proposed GI works for the Dunkettle STC

European site	Distance from proposed GI works	Description
Cork Harbour SPA (NPWS, 2014a)	3.3 km east of the indicative proposed GI works locations.	<p>Cork Harbour is a large, sheltered bay system, with several river estuaries, including the River Lee and Douglas River which are in proximity to the proposed GI works.</p> <p>The SPA is designated for supporting internationally important numbers of wintering waterfowl which can reach an excess of 20,000. It is noted that the site supports internationally important populations of:</p> <ul style="list-style-type: none"> black-tailed godwit (<i>Limosa limosa</i>), and redshank (<i>Tringa totanus</i>). <p>As well as nationally important populations of:</p> <ul style="list-style-type: none"> little grebe (<i>Tachybaptus ruficollis</i>), great crested grebe (<i>Podiceps cristatus</i>), cormorant (<i>Phalacrocorax carbo</i>), grey heron (<i>Ardea cinerea</i>), shelduck (<i>Tadorna tadorna</i>), wigeon (<i>Anas penelope</i>), teal (<i>Anas crecca</i>), mallard (<i>Anas Platyrhynchos</i>), pintail (<i>Anas acuta</i>), shoveler (<i>Anas clypeata</i>), red-breasted merganser (<i>Mergus serrator</i>), oystercatcher (<i>Haematopus ostralegus</i>), golden plover (<i>Pluvialis apricaria</i>), grey plover (<i>Pluvialis squatarola</i>),

European site	Distance from proposed GI works	Description
		<ul style="list-style-type: none"> • lapwing (<i>Vanellus vanellus</i>), • dunlin (<i>Calidris alpina</i>), • bar-tailed godwit (<i>Limosa lapponica</i>), • curlew (<i>Numenius Arquata</i>), and • greenshank (<i>Tringa nebularia</i>). <p>In addition, the site supports the largest population of shelduck in Ireland.</p> <p>According to the citation, Cork Harbour is an important site for black-headed gull (<i>Chroicocephalus ridibundus</i>), common gull (<i>Larus canus</i>) and lesser black-backed gull (<i>Larus fuscus</i>) during the autumn and winter.</p> <p>During the breeding bird season, the SPA supports a nationally important breeding colony of common tern.</p>
The Great Island Channel SAC (NPWS, 2014b)	Located 7.3 km east of the indicative proposed GI works.	The Great Island Channel forms the eastern stretch of the Cork Harbour river basin, within which sit the estuaries of the Owenacurra and Dungourney Rivers. The main habitats of conservation interest in Great Island Channel SAC are the sheltered tidal sand and mudflats and the Atlantic salt meadows. The SAC is hydrologically linked downstream to the River Lee.

In addition to the Cork Harbour SPA and the Great Island Channel SAC, part of the Cork Harbour is designated as a Ramsar Site under the Convention on Wetlands. The Cork Harbour Ramsar site lies within the wider and extensive wetland system that is Cork Harbour and is focussed on four separate areas of intertidal habitat at Lough Mahon, Great Island Channel, Whitegate Bay and Lough Beg. These areas are an integral part of the larger Cork Harbour SPA, and part of the Ramsar site lies within the Great Island Channel SAC.

4.3 Annex I habitats

No Annex I habitats listed were identified on the Dunkettle STC.

4.4 Species

This section details the baseline for species relevant to the European sites.

4.4.1 Wintering birds

A search of the NBDC identified a number of records of QI bird species of the Cork Harbour SPA within approximately 1 km of the proposed GI works at the Dunkettle STC as summarised in Table 4.2.

Table 4.2 QI Species returned from the NBDC database search (from October 2014-October 2024)

Species	Scientific name	Record count	Date of last record	Database
Little grebe	<i>Tachybaptus ruficollis</i>	2	22/03/2020	Birds of Ireland
Cormorant	<i>Phalacrocorax carbo</i>	5	14/01/2018	Birds of Ireland
Grey heron	<i>Ardea cinerea</i>	4	22/03/2020	Birds of Ireland
Shelduck	<i>Tadorna tadorna</i>	1	02/12/2017	Birds of Ireland
Wigeon	<i>Anas penelope</i>	1	02/12/2017	Birds of Ireland
Oystercatcher	<i>Haematopus ostralegus</i>	2	02/11/2017	Birds of Ireland

Species	Scientific name	Record count	Date of last record	Database
Lapwing	<i>Vanellus vanellus</i>	1	02/12/2017	Birds of Ireland
Black-tailed godwit	<i>Limosa limosa</i>	1	19/11/2016	Birds of Ireland
Curlew	<i>Numenius arquata</i>	1	02/12/2017	Birds of Ireland
Black-headed gull	<i>Larus ridibundus</i>	3	22/03/2020	Birds of Ireland
Common gull	<i>Larus canus</i>	3	02/12/2017	Birds of Ireland

Wintering bird surveys were conducted from October 2023 to March 2024 as part of the environmental assessments for the BusConnects Cork STCs. For the purpose of this report, only surveys undertaken within 1 km of the proposed GI works are included in the assessment (refer to Section 2.4.4 Wintering bird surveys). A summary of the results is presented in Table 4.3, comprising peak counts recorded during the wintering bird surveys. The peak counts are also presented as a percentage of the Cork Harbour SPA population (refer to Section 2.4.6 Population thresholds of QI species).

A spatial review of the wintering bird survey data from October 2023-March 2024 (see Table 4.3), identified significant numbers of black-headed gull, including a peak count calculated as 1.18% of the Cork Harbour SPA population recorded on the River Lee close to Cork city centre, south of Horgan's Quay (refer to Appendix A, Photo 1). Other bird species recorded at this location include individual and small numbers of lesser black-backed gull, common gull, herring gull, cormorant, and grey heron. Due to this area supporting over the threshold 1% of the SPA population of black-headed gull, this area will be considered functionally linked land during the assessment.

In addition, the review found that grey heron (*Ardea cinerea*), exceeded the 1% population threshold for identifying significant numbers of QI bird species. However, as this was an individual bird, that was only recorded during one of the six survey visits, this is considered an incidental sighting and not judged to qualify as a significant quantity of the population. As such, this area is not considered functionally linked land for grey heron.

No other notable numbers of bird species were recorded at other locations during the wintering bird surveys, with the remaining records comprising individual and small numbers of birds.

Table 4.3: Summary table of peak counts* during the wintering bird survey data collected between October 2023-March 2024

Species	Scientific name	October	November	December	January	February	March	Peak Count *	Cork Harbor SPA QI (yes/no)	Cork Harbour SPA 5 year mean peak**	% of the SPA**
Black-headed gull	<i>Larus ridibundus</i>	43	2	18	31	3	5	43	Yes	3,640	1.18%
Common gull	<i>Larus canus</i>	-	-	-	1	-	-	1	Yes	1,562	0.06%
Common sandpiper	<i>Actitis hypoleucos</i>	-	-	-	-	1	-	-	No	N/A	N/A
Cormorant	<i>Phalacrocorax carbo</i>	1	-	1	1	-	1	1	Yes	521	0.19%
Grey heron	<i>Ardea cinerea</i>	1	-	-	-	-	-	1	Yes	80	1.25%
Herring gull	<i>Larus argentatus</i>	4	-	10	3	-	14	10	No	N/A	N/A
Lesser black-backed gull	<i>Larus fuscus</i>	1	-	4	3	-	5	5	Yes	783	0.13%
Mallard	<i>Anas platyrhynchos</i>	-	-	-	-	-	2	2	No	N/A	N/A

* Peak counts of birds recorded loafing, resting or foraging, not including birds recorded in flight/passage.

** The percent of the Cork Harbour SPA calculated using the population figures from the five-year mean peaks for the period 1995/96 to 1999/2000 (NPWS, 2014a).

4.5 Aquatic Environment

The WFD (EPA, 2024) is an important mechanism for assessing and managing the water environment in the EU, through a six-yearly cycle of planning and implementing measures to protect and improve the water environment. It applies to all rivers, lakes, estuaries, coastal waters and groundwater. Good ecological status is the WFD default objective for all water bodies and is defined as a slight variation from undisturbed conditions. The WFD status may be determined by using monitoring, extrapolation or expert judgement techniques.

Waterbodies, including watercourses and transitional waterbodies, in the vicinity of the proposed GI works assessed using desk-based review, are presented in Table 4.4.

Table 4.4: Water Framework Directive Status of Watercourses within the study area (EPA, 2024)

Name	European Code	WFD status*	Status determination technique	Location
Lee (Cork) Estuary Lower	IE_SW_060_0900	Moderate	Monitoring	Adjacent
Lee (Cork) Estuary Upper	IE_SW_060_0950	Moderate	Monitoring	Adjacent
Bride (Cork City) 020	IE_SW_19B140300	Poor	Modelling	0.8 km west

*WFD status assigned between 2016-2021

4.6 Invasive Species

No INNS listed on the Third Schedule of the European Communities (EC) (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477/2011) were identified within the survey area for the Dunkettle STC.

However, the field survey identified butterfly bush (*Buddleia davidii*) which is classed as invasive by the NBDC, but not listed on the Third Schedule of The European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) (as amended).

5. Identification of Relevant European Sites

5.1 Introduction

The proposed GI works were examined with reference to their location and proximity to European sites and taking account of the source-pathway-receptor' model and potential effects outlined in Table 2.1. Consideration was given to the potential for functionally linked land and hydrological connectivity via watercourses to be present within the zones of influence of impact pathways.

5.2 European sites within the Zol of the proposed GI works

The proposed GI works are not directly connected with or essential for the management of any European site. The proposed GI works are not situated in or are directly adjacent to any European site.

Table 5.1 identifies all the potentially relevant European sites, within the vicinity of the proposed GI works, whose designated area or functionally linked land lies within one or more of the Zols. Table 5.1 determines whether these identified European sites should be taken forward for assessment of LSE.

Of the potentially relevant European sites listed in Table 5.1, ten were not considered relevant for screening due to the small scale of the proposed GI works and the absence of effect pathways, notably negligible hydrological connectivity and the absence of functionally linked land (refer to Table 5.1 for details).

Two European sites were identified within the Zols which are relevant for the screening assessment and are considered further in Section 6:

- Cork Harbour SPA (004030); and
- Great Island Channel SAC (001058).

Figure B1, Appendix B illustrates the locations of European sites in relation to the proposed GI works for the Dunkettle STC.

Table 5.1: European Sites within the Zol of the Proposed GI works

Potentially relevant European sites considered in the assessment	Zols that overlap the site or functionally linked land associated with it	Relevant European site requiring assessment of LSEs?	Qualifying Interest features	Conservation Objectives and Qualifying Interests
Cork Harbour SPA (004030) (NPWS, 2014a) located approximately 3.3 km east of the proposed GI works.	Surface water catchment connectivity (Habitat degradation – changes in water quality and Habitat degradation – hydrogeological changes) Groundwater catchment connectivity (Habitat degradation – hydrological changes) Functionally linked land (River Lee) identified within 300 m of the proposed GI works (Disturbance of species)	Yes	Little grebe [A004] Great crested grebe [A005] Cormorant [A017] Grey heron [A028] Shelduck [A048] Wigeon [A050] Teal [A052] Pintail [A054] Shoveler [A056] Red-breasted Merganser [A069] Oystercatcher [A130] Golden plover [A140] Grey plover [A141] Lapwing [A142] Dunlin [A149] Black-tailed godwit [A156] Bar-tailed godwit [A157] Curlew [A160] Redshank [A162] Black-headed gull [A179] Common gull [A182] Lesser black-backed gull [A183] Common tern [A193] Wetland and waterbirds [A999]	To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.
Great Island Channel SAC (001058) (NPWS, 2014b) located approximately 7.3 km east of the proposed GI works.	Surface water catchment connectivity (Habitat degradation – changes in water quality and Habitat degradation – hydrogeological changes) Groundwater catchment connectivity (Habitat degradation – hydrological changes).	Yes	Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	To maintain the favourable conservation condition of and to restore the favourable conservation condition of QI features of this SAC.
The Gearagh SAC (000108) (NPWS, 2016) located approximately 35 km west of the proposed GI works, the hydrological distance is approximately 42 km.	The site is hydrologically connected to the River Lee, but it is outside of the Zol for all QI.	No	Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho</i> -Batrachion vegetation [3260] Rivers with muddy banks with <i>Chenopodion rubri</i> p.p. and <i>Bidention</i> p.p. vegetation [3270] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	To maintain or restore the favourable conservation condition of habitats and species listed as QI for this SAC.

Potentially relevant European sites considered in the assessment	ZoIs that overlap the site or functionally linked land associated with it	Relevant European site requiring assessment of LSEs?	Qualifying Interest features	Conservation Objectives and Qualifying Interests
			Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] Otter [1355]	
Roaringwater Bay and Islands SAC (000101) (NPWS, 2011a) located 75 km south-west of the proposed GI works, the hydrological distance is approximately 120 km.	The site is hydrologically connected, but is outside of the ZoI for all QI.	No	Large shallow inlets and bays [1160] Reefs [1170] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030] Submerged or partially submerged sea caves [8330] Harbour porpoise [1351] Otter [1355] Grey seal [1364]	To maintain or restore the favourable conservation condition of habitats and species listed as QI for this SAC.
Glengarriff Harbour and Woodland SAC (000090) (NPWS, 2011b) located approximately 75 km south-west of the proposed GI works, the hydrological distance is approximately 200 km.	The site is hydrologically connected, but is outside of the ZoI for all QI.	No	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] Kerry slug (<i>Geomalacus maculosus</i>) [1024] Lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) [1303] Otter [1355] Common seal [1365]	To maintain the favourable conservation condition of habitats and species listed as QI for this SAC.
Lower River Shannon SAC (002165) (NPWS, 2012a) located approximately 100 km north-west of the proposed GI works, the hydrological distance is approximately 350 km.	The site is hydrologically connected, but is outside of the ZoI for all QI.	No	Sandbanks which are slightly covered by sea water all the time [1110] Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Coastal lagoons [1150] Large shallow inlets and bays [1160] Reefs [1170] Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Water courses of plain to montane levels with the <i>Ranuncion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) [1029] Sea lamprey (<i>Petromyzon marinus</i>) [1095] Brook lamprey (<i>Lampetra planeri</i>) [1096]	To maintain or restore the favourable conservation condition of habitats and species listed as QI for this SAC.

Potentially relevant European sites considered in the assessment	Zols that overlap the site or functionally linked land associated with it	Relevant European site requiring assessment of LSEs?	Qualifying Interest features	Conservation Objectives and Qualifying Interests
			River lamprey (<i>Lampetra fluviatilis</i>) [1099] Salmon (<i>Salmo salar</i>) [1106] Common bottlenose dolphin [1349] Otter [1355]	
Blackwater River (Cork/Waterford) SAC (002170) (NPWS, 2012b) located 14.5 km north of the proposed GI works.	The Blackwater River SAC is outside of the Zol of the proposed GI works, located in a different catchment, and is not hydrologically connected to the proposed GI works.	No	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Perennial vegetation of stony banks [1220] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] Freshwater pearl mussel [1029] White-clawed crayfish (<i>Austropotamobius pallipes</i>) [1092] Sea lamprey [1095] Brook lamprey [1096] River lamprey [1099] Twite shad (<i>Alosa fallax fallax</i>) [1103] Salmon [1106] Otter [1355] Killarney fern (<i>Trichomanes speciosum</i>) [1421]	
Sovereign Islands SPA (004124) (NPWS, 2022a) located approximately 24.7 km south of the proposed GI works.	This site is not within hydrological connectivity of the proposed GI works and is beyond other Zols.	No	Cormorant [A017]	To maintain or restore the favourable conservation condition of the bird species listed as QI for this SPA.
The Gearagh SPA (004109) (NPWS, 2022b) located approximately 35 km west of the proposed GI works.	The site is hydrologically connected to the River Lee, however it is considered to be outside of the Zol.	No	Wigeon [A050] Teal [A052] Mallard [A053] Coot (<i>Fulica atra</i>) [A125] Wetland and waterbirds [A999]	To maintain or restore the favourable conservation condition of the bird species listed as QI for this SPA.
Mullaghanish to Musheramore Mountains SPA (004162) (NPWS, 2022c) located approximately 36 km west of the proposed GI works.	There were no effect pathways to the designated site identified, and the site is outside of the Zol of the proposed GI works.	No	Hen Harrier (<i>Circus cyaneus</i>) [A082]	To maintain or restore the favourable conservation condition of the bird species listed as QI for this SPA.

Potentially relevant European sites considered in the assessment	Zols that overlap the site or functionally linked land associated with it	Relevant European site requiring assessment of LSEs?	Qualifying Interest features	Conservation Objectives and Qualifying Interests
Ballycotton Bay SPA (004022) (NPWS, 2014c) located approximately 30 km east of the proposed GI works.	This site is not within hydrological connectivity of the proposed GI works and is beyond other Zols.	No	Teal [A052] Ringed plover [A137] Golden plover [A140] Grey plover [A141] Lapwing [A142] Black-tailed godwit [A156] Bar-tailed godwit [A157] Curlew [A160] Turnstone (<i>Arenaria interpres</i>) [A169] Common gull [A182] Lesser black-backed gull [A183] Wetland and waterbirds [A999]	To maintain or restore the favourable conservation condition of the bird species listed as QI for this SPA.
Courtmacsherry Estuary SAC (001230) (NPWS, 2014d) located approximately 29 km south of the proposed GI works.	This site is not within hydrological connectivity of the proposed GI works and is beyond other Zols.	No	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] Perennial vegetation of stony banks [1220] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	To maintain or restore the favourable conservation condition of habitats and species listed as QI for this SAC.
Courtmacsherry Bay SPA (004219) (NPSW, 2014e) located approximately 30 km south of the proposed GI works.	This site is not within hydrological connectivity of the proposed GI works and is beyond other Zols.	No	Great northern diver (<i>Gavia immer</i>) [A003] Shelduck [A048] Wigeon [A050] Red-breasted merganser [A069] Golden plover [A140] Lapwing [A142] Dunlin [A149] Black-tailed godwit [A156] Bar-tailed Godwit [A157] Curlew [A160] Black-headed gull [A179] Common gull [A182] Wetland and waterbirds [A999]	To maintain or restore the favourable conservation condition of the bird species listed as QI for this SPA.

Potentially relevant European sites considered in the assessment	Zols that overlap the site or functionally linked land associated with it	Relevant European site requiring assessment of LSEs?	Qualifying Interest features	Conservation Objectives and Qualifying Interests
Old Head of Kinsale SPA (004021) (NPWS, 2022d) located approximately 31 km south of the proposed GI works.	This site is not within hydrological connectivity of the proposed GI works and is beyond other Zols.	No	Kittiwake (<i>Rissa tridactyla</i>) [A188] Guillemot (<i>Uria aalge</i>) [A199]	To maintain or restore the favourable conservation condition of the bird species listed as QI for this SPA.
Blackwater Callows SPA (004094) (NPWS, 2022e) located approximately 29 km north of the proposed GI works.	This site is not within hydrological connectivity of the proposed GI works and is beyond other Zols.	No	Whooper Swan (<i>Cygnus cygnus</i>) [A038] Wigeon [A050] Teal [A052] Black-tailed godwit [A156] Wetland and waterbirds [A999]	To maintain or restore the favourable conservation condition of the bird species listed as QI for this SPA.

6. Assessment of Likely Significant Effects (LSEs)

6.1 Introduction

This section presents the screening exercise and the result of the impact assessment that was undertaken.

6.2 Screening Exercise

A screening exercise is presented in Table 6.1 which examines the potential effects of the proposed GI works for the Dunkettle STC on European sites and the QI (Annex I habitats and Annex II species) for which they are designated. The results of this exercise and the rationale for 'screening in or screening out' European sites within the Zol (and therefore, of potential relevance to the AA) are also detailed in Table 6.1.

Consideration of LSE due to the proposed GI works was given to the European sites located within the Zol identified in Table 5.1.

Table 6.1: European Sites with the Potential for LSEs from the proposed GI works

European site (and connectivity)	Conservation Objectives and Qualifying Interests (*=priority habitat).	Potential pathway	Assessment of LSE Alone	LSE from the proposed GI works alone
Cork Harbour SPA (004030) (NPWS, 2014a). Located approximately 3.3 km* east of the proposed GI works. No direct hydrological connectivity, however, groundwater runoff provides indirect hydrological connectivity.	To maintain the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Little grebe [A004] Great crested grebe [A005] Cormorant [A017] Grey heron [A028] Shelduck [A048] Wigeon [A050] Teal [A052] Pintail [A054] Shoveler [A056] Red-breasted merganser [A069] Oystercatcher [A130] Golden plover [A140] Grey plover [A141] Lapwing [A142] Dunlin [A149] Black-tailed godwit [A156]	Habitat loss	The European site is located 3.3 km east of the proposed GI works. The area of the River Lee which was identified as functionally linked land is located approximately 30m from the proposed GI works at their closest point and separated by a high wall. The European site and functionally linked land are outside of the proposed GI works boundary and so outside of the Zol of habitat loss and therefore there is no pathway to an effect.	No LSE at all
		Habitat degradation – changes in water quality	The European site is located 3.3 km east of the proposed GI works. The area of the River Lee which was identified as functionally linked land is located approximately 30 m from the proposed GI works at their closest point and separated by a high wall. The European site and functionally linked land are hydrologically linked. All proposed GI works are small scale and of short duration, with a rig typically not being at one borehole one location for more than three days (more likely one day due to shallow depth), and trial pits expected to be excavated in one to two days at each location. No extensive or deep earth works will be required, with an estimated maximum borehole depth of 8 m identified in the GI scope. All ground will be reinstated post works. The proposed GI works will follow standard best practice pollution prevention measures. Any surface water will be prevented from entering the watercourse by the standard management measures and captured by the urban drainage system. Overall, while a conceivable pathway to an effect has been identified, it is highly unlikely that pollutants or sediments could enter a watercourse in quantities to significantly degrade or pollute the SPA and/or functionally linked land. Therefore, the effects are predicted to be so small in scale and nature that they are considered to be inconsequential and expected to result in no appreciable effect.	No LSE at all
		Habitat degradation – changes in air quality	The European site is outside of the Zol for the proposed GI works and therefore there is no pathway to an effect. The area of the River Lee which was identified as functionally linked land is located approximately 30 m from the proposed GI works at their closest point and separated by a high wall. All proposed GI works are small scale and of short duration, with a rig typically not being at one borehole one location for more than three days (more likely one day due to shallow depth), and trial pits expected to be excavated in one to two days at each location. No extensive or deep earth works will be required, with an estimated maximum borehole depth of 8 m identified in the GI scope. All ground will be reinstated post works. The proposed GI works will follow standard best practice pollution prevention measures.	No LSE at all

European site (and connectivity)	Conservation Objectives and Qualifying Interests (*=priority habitat).	Potential pathway	Assessment of LSE Alone	LSE from the proposed GI works alone
	Bar-tailed godwit [A157] Curlew [A160] Redshank [A162]		Overall, while a conceivable pathway to an effect has been identified, it is highly unlikely that air pollutants would be produced in quantities to significantly degrade or pollute the functionally linked land. Therefore, the effects are predicted to be so small in scale and nature that they are considered to be inconsequential and expected to result in no appreciable effect.	
	Black-headed gull [A179] Common gull [A182] Lesser black-backed gull [A183] Common tern [A193] Wetland and waterbirds [A999]	Habitat degradation – hydrological changes	<p>The European site is located 3.3 km east of the proposed GI works. The area of the River Lee which was identified as functionally linked land is located approximately 30 m from the proposed GI works at their closest point and separated by a high wall. The European site and functionally linked land are hydrologically linked.</p> <p>There are to be no in-stream structures or changes to drainage from the proposed GI works which would result in changes in hydrology. All proposed GI works are small scale and of short duration, with a rig typically not being at one borehole one location for more than three days (more likely one day due to shallow depth), and trial pits expected to be excavated in one to two days at each location. No extensive or deep earth works will be required, with an estimated maximum borehole depth of 8 m identified in the GI scope. All ground will be reinstated post works. There will be no change to flows and volumes of water in the environment and therefore there is no pathway to an effect.</p>	No LSE at all
	Habitat degradation – hydrogeological changes	<p>The European site is located 3.3 km east of the proposed GI works. The area of the River Lee which was identified as functionally linked land is located approximately 30 m from the proposed GI works at their closest point and separated by a high wall. The European site and functionally linked land are outside of the proposed GI works boundary. The European site may be within the groundwater catchment of the proposed GI works.</p> <p>All proposed GI works are small scale and of short duration, with a rig typically not being at one borehole one location for more than three days (more likely one day due to shallow depth), and trial pits expected to be excavated in one to two days at each location. No extensive or deep earth works will be required, with an estimated maximum borehole depth of 8 m identified in the GI scope. All ground will be reinstated post works. Any surface water will be prevented from entering the watercourse by the standard management measures and captured by the urban drainage system. The proposed GI works would not cause changes to groundwater volumes and flows, which in turn might change the hydrogeology of QI habitats and supporting or functionally linked habitats of QI species.</p> <p>Overall, there is no pathway to an effect.</p>	No LSE at all	

European site (and connectivity)	Conservation Objectives and Qualifying Interests (*=priority habitat).	Potential pathway	Assessment of LSE Alone	LSE from the proposed GI works alone
		Habitat degradation – spread of invasive species	<p>The European site is located 3.3 km east of the proposed GI works. The area of the River Lee which was identified as functionally linked land is located approximately 30 m from the proposed GI works at their closest point and separated by a high wall.</p> <p>The European site and functionally linked land are outside of the proposed GI works boundary and so outside of the Zol of the spread of invasive species and therefore there is no pathway to an effect.</p>	No LSE at all
		Disturbance of species	<p>The European site is located 3.3 km east of the proposed GI works. The area of the River Lee which was identified as functionally linked land is located approximately 30m from the proposed GI works.</p> <p>There are no proposed GI works located within 300 m of the SPA.</p> <p>The section of the River Lee adjacent to Horgan’s Quay was identified as functionally linked land during the wintering bird surveys, as supporting more than the 1% threshold population of black-headed gull (refer to Section 4.4). This functionally linked land is within the 300 m Zol of the proposed GI works for disturbance of QI bird species. It was noted that black-headed gulls were only recorded in numbers which exceed the 1% SPA population threshold in one of the six wintering bird survey visits (October 2023). The majority of surveys recorded insignificant numbers of black-headed gulls, which would not qualify the area as functionally linked land. A review of the Cork Harbour Conservation Objectives Supporting document (NPWS, 2014a), indicates that black-headed gulls were recorded as widespread across the SPA, with highly varying numbers across survey visits. In addition, peak counts which greatly exceed those recorded in the functionally linked land were recorded in the SPA. Therefore, while black-headed gulls were recorded in significant numbers during one survey visit, this is a highly mobile species that is known to utilise widespread and varied habitats across the Cork Harbour SPA and surrounding landscape.</p> <p>Noise and vibrations from the proposed GI works could result in disturbance/displacement of QI bird species which are present immediately adjacent to the proposed GI works. However, as the proposed GI works are located within a highly disturbed area, adjacent to a road and an operational harbour and port and close to the city centre, the proposed GI works area is already subject to high levels of noise disturbance and regular boat traffic. Therefore, it is considered that black-headed gulls roosting at the site will be habituated to a certain amount of disturbance. All proposed GI works are small scale and of short duration, with a rig typically not being at one borehole one location for more than three days (more likely one day due to shallow depth), and trial pits expected to be excavated in one to two days at each location. No extensive or deep earth works will be required, with an estimated maximum borehole depth of 8 m identified in the GI scope.</p>	No LSE at all

European site (and connectivity)	Conservation Objectives and Qualifying Interests (*=priority habitat).	Potential pathway	Assessment of LSE Alone	LSE from the proposed GI works alone
			Overall, while a conceivable pathway to an effect has been identified, it is understood that the functionally linked land only occasionally supports significant numbers of black-headed gull, and this species is highly mobile and utilises a widespread variety of habitats across the Cork Harbour SPA and surrounding land. It is considered that any potentially disturbing stimuli caused by the works would be imperceptible to the birds (for the reasons described above). Therefore, the effects are predicted to be so small in scale and nature that they are considered to be inconsequential and expected to result in no appreciable effect.	
		Mortality	The European site is located 3.3 km east of the proposed GI works. The area of the River Lee which was identified as functionally linked land is located approximately 30 m from the proposed GI works at their closest point and separated by a high wall. The European site and functionally linked land are outside of the proposed GI works boundary and outside of the ZoI of mortality and therefore there is no pathway to an effect.	No LSE at all
Great Island Channel SAC (001058) (NPWS, 2014b) Located 7.3 km* east of the proposed GI works. No direct hydrological connectivity, however, groundwater runoff provides indirect hydrological connectivity.	To maintain or restore the favourable conservation condition of the Annex I habitats and Annex II species for which the SAC has been selected. Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows [1330]	Habitat loss	The European site is located 7.3 km east of the proposed GI works. The European site outside of the proposed GI works boundary, and so outside of the ZoI of habitat loss and therefore there is no pathway to an effect.	No LSE at all
		Habitat degradation – changes in water quality	The European site is located 7.3 km east of the proposed GI works. All proposed GI works are small scale and of short duration, with a rig typically not being at one borehole one location for more than three days (more likely one day due to shallow depth), and trial pits expected to be excavated in one to two days at each location. No extensive or deep earth works will be required, with an estimated maximum borehole depth of 8 m identified in the GI scope. All ground will be reinstated post works. The proposed GI works will follow standard best practice pollution prevention measures. Any surface water will be prevented from entering the watercourse by the standard management measures and captured by the urban drainage system. Overall, while a conceivable pathway to an effect has been identified, it is highly unlikely that pollutants or sediments could enter a watercourse in quantities to significantly degrade or pollute the SPA and/or functionally linked land. Therefore, the effects are predicted to be so small in scale and nature that they are considered to be inconsequential and expected to result in no appreciable effect.	No LSE at all
		Habitat degradation – changes in air quality	The European site is located 7.3 km east of the proposed GI works.	No LSE at all

European site (and connectivity)	Conservation Objectives and Qualifying Interests (*=priority habitat).	Potential pathway	Assessment of LSE Alone	LSE from the proposed GI works alone
			The European site is outside of the proposed GI works boundary and so outside of the ZoI of habitat degradation through changes in air quality. In addition, the proposed GI works will not result in significant changes in air quality and therefore there is no pathway to an effect.	
		Habitat degradation – hydrological changes	The European site is located 7.3 km east of the proposed GI works. The European site is outside of the proposed GI works boundary and so outside of the ZoI of habitat degradation through hydrological changes and therefore there is no pathway to an effect	No LSE at all
		Habitat degradation – hydrogeological changes	The European site is located 7.3 km east of the proposed GI works. All proposed GI works are small scale and of short duration, with a rig typically not being at one borehole one location for more than three days (more likely one day due to shallow depth), and trial pits expected to be excavated in one to two days at each location. No extensive or deep earth works will be required, with an estimated maximum borehole depth of 8 m identified in the GI scope. All ground will be reinstated post works. Any surface water will be captured by the urban drainage system. The proposed GI works would not cause changes to groundwater volumes and flows, which in turn might change the hydrogeology of QI habitats and supporting or functionally linked habitats of QI species. Overall, there is no pathway to an effect.	No LSE at all
		Habitat degradation – spread of invasive species	The European site is outside of the proposed GI works boundary and so outside of the ZoI of habitat loss and therefore there is no pathway to an effect.	No LSE at all
		Disturbance of species	N/A	No LSE at all
		Mortality	N/A	No LSE at all

* No appreciable effect being where the effects are predicted to be so small in scale and nature that they are considered to be inconsequential.

6.3 Determination of Likely Significant Effects

6.3.1 Alone Assessment

An examination of European Sites and their QI features within the Zol of the proposed GI works is presented in Table 5.3. Potential pathways have been identified between the proposed GI works and European sites as outlined in Table 6.1. From this assessment, it can be concluded that all LSEs can be excluded on the basis of objective information and so Stage 2 AA is not required. No European Sites were identified for further examination.

6.3.2 In-combination Assessment

All LSEs have been excluded on the basis that there is no pathway to an effect and therefore no effect at all. Therefore, the in-combination assessment does not need to consider other plans and projects as, if there is no effect at all from the proposed GI works, then the proposed GI works cannot contribute to combined effects with other plans and projects irrespective of how many plans and projects there might be that may have in-combination effects.

7. Screening Statement and Conclusion

The proposed GI works for the Dunkettle STC are not connected with, or necessary to, the management of any European site(s).

This AA Screening Report presents the objective scientific information required to inform a robust and complete examination of the potential impacts of the proposed GI works on European sites.

The conclusion of the Screening for AA is that, in the absence of mitigation measures, there are no Likely Significant Effects either alone or in-combination to undermine the conservation objectives of any European sites, and therefore Stage 2 AA of the proposed GI works is not required.

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Appendix A. Photographs



Photo 1. River Lee from Horgan's Quay



Photo 2. River Lee from Lower Glanmire Road



Photo 3. River Lee from Lower Glanmire Road

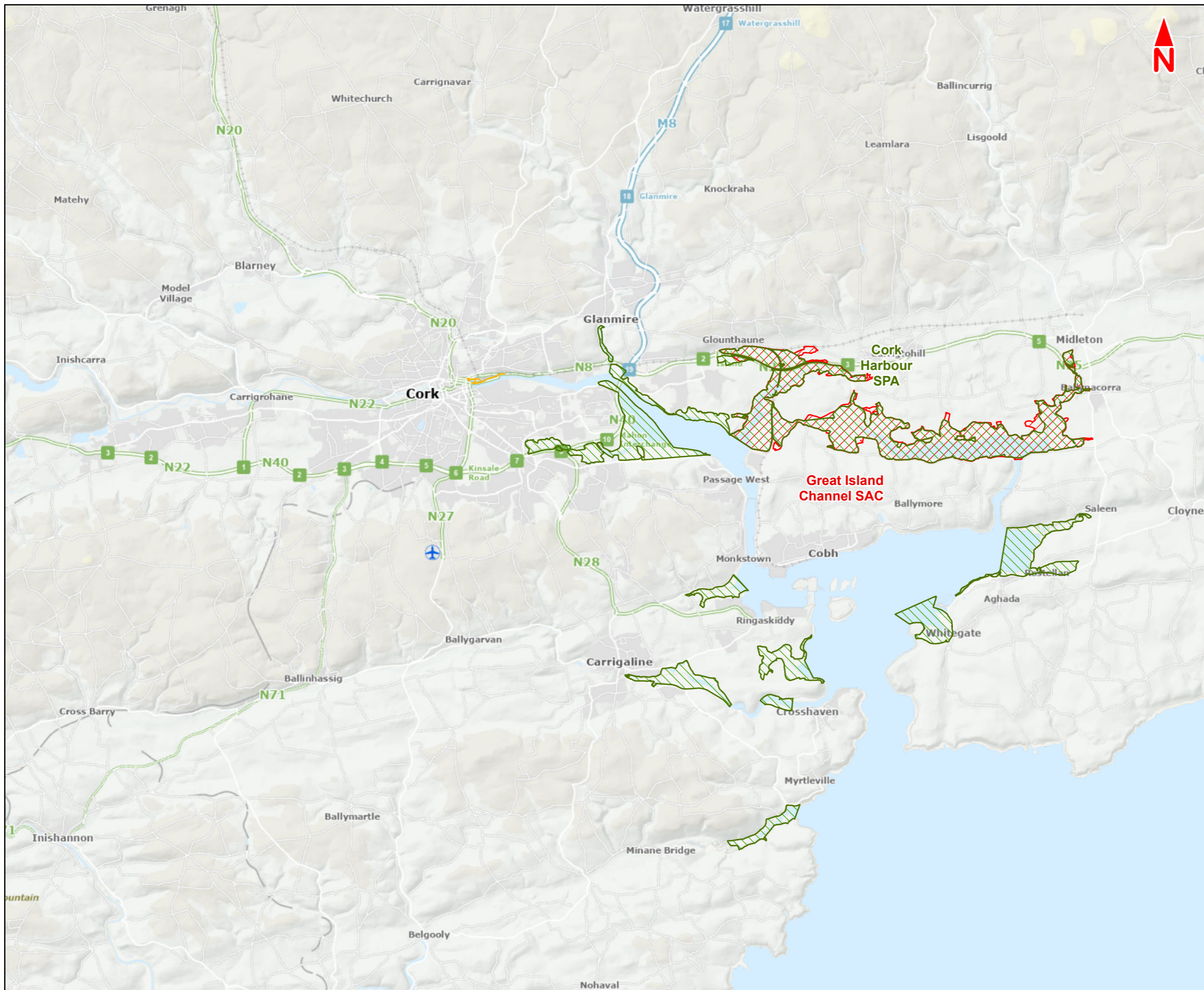


Photo 4. Works yard located next to Horgan's Quay





Appendix B. Figures

Figure B1. Location of European Sites in relation to Dunkettle STC

Figure B2. Location of Wintering Bird Surveys in relation to Dunkettle STC



Legend:

-  Dunkettle STC
-  NPWS EU Designated Sites
-  Special Protection Areas
-  Special Area of Conservation

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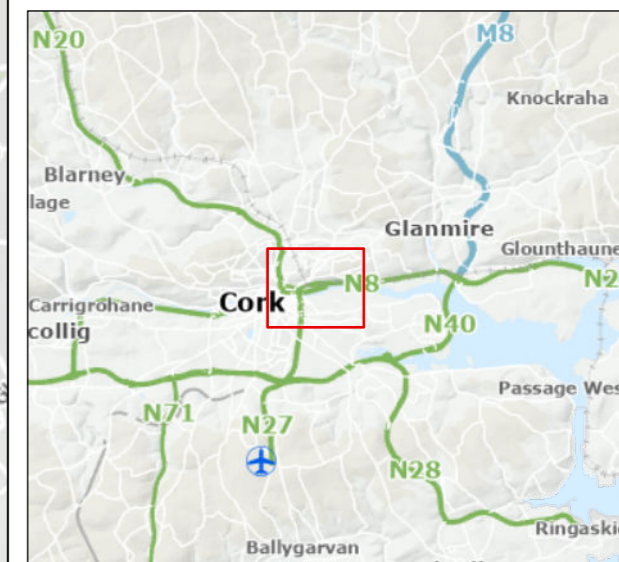
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-	Nov 2024	LF	SK	ZC	For Information

Client: **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer: **Jacobs ARUP SYSTRA**

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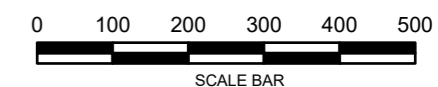
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Scheme Title CORK CITY NORTH SUSTAINABLE TRANSPORT CORRIDORS SCHEME			
Drawing Title Figure B1 Location of European Sites in relation to Dunkettle STC			
Drawing File Name BCCE-3-JAS-X-ENV-DR-G-3891	Sheet Number 1 of 1	Phase 03	Rev -



Legend:

- Dunkettle STC
- Vantage Point
- Transect Routes

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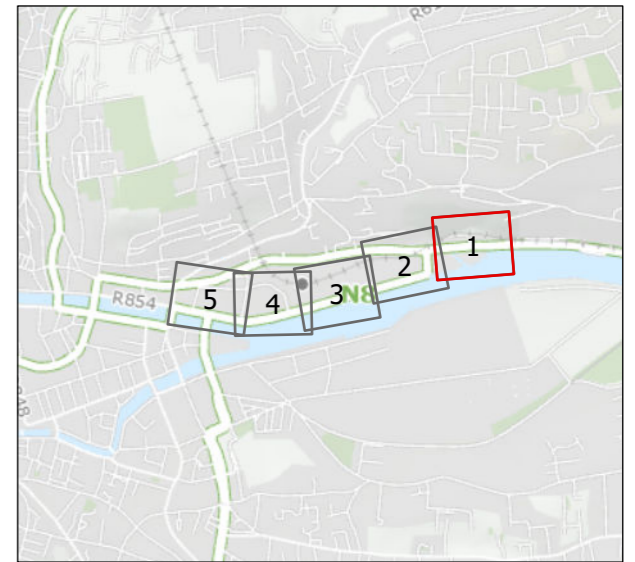
Engineering Designer: **Jacobs ARUP SYSTRA**

Date: Nov 2024	Scale: 1:5 000 @ A1 1:10 000 @ A3	Drawn: LF	Checked: SK	Approved: ZC
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Scheme Title: CORK CITY NORTH SUSTAINABLE TRANSPORT CORRIDORS SCHEME			
Drawing Title: Figure B2 Location of Wintering Bird Surveys in relation to Dunkettle STC		Sheet Number: 1 of 1	Phase: 03
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Appendix C. Proposed Ground Investigation Plan

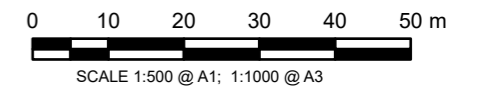
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Legend:

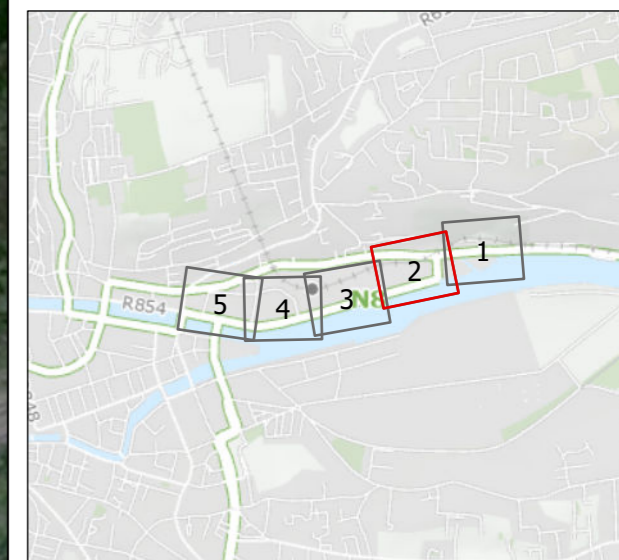
Dunkettle STC

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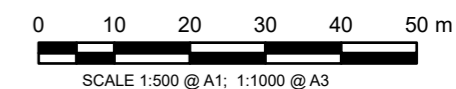
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Legend:

- Dunkettle STC
- Proposed GI Data Editable**
- Cable Percussive Borehole
- Trial Pit



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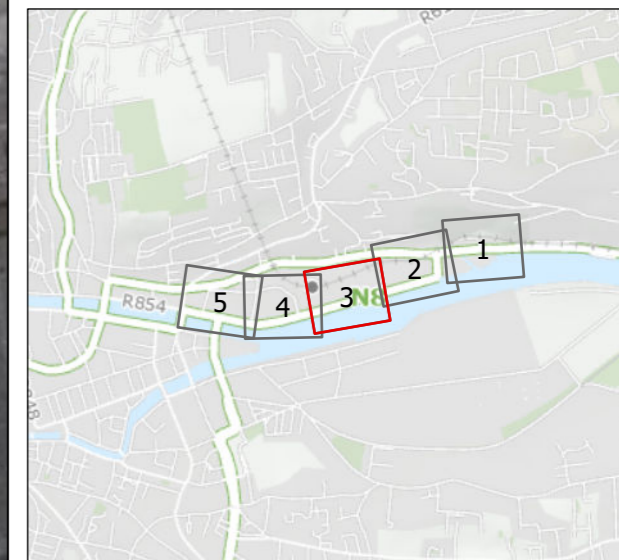
Project Ireland 2040
 Building Ireland's Future

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Client		Engineering Designer	
 Údarás Náisiúnta Iompair National Transport Authority			
Date	Nov 2024	Scale	1:500 @ A1 1:1000@ A3
Project Code	BCCA	Originator Code	JAC
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		Checked	SK
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Programme Title			
BUSCONNECTS CORK SUSTAINABLE TRANSPORT CORRIDORS			
Scheme Title			
CORK CITY NORTH SUSTAINABLE TRANSPORT CORRIDORS SCHEME			
Drawing Title			
DUNKETTLE STC: PROPOSED GROUND INVESTIGATION PLAN			
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Phase	03	Rev	-

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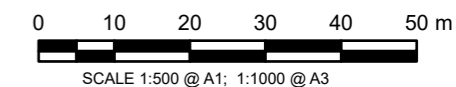
Dunkettle STC

Proposed GI Data Editable

Cable Percussive Borehole

Trial Pit

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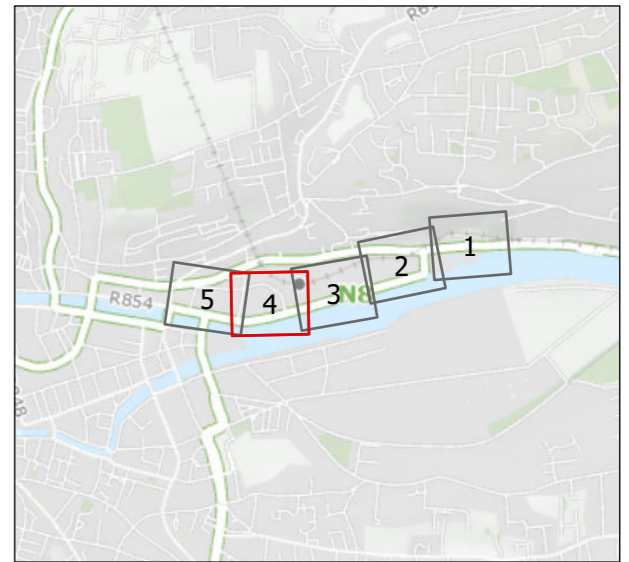
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Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer: **Jacobs**

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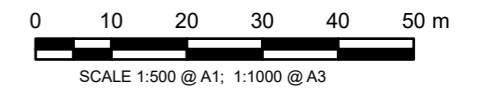
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Legend:

Dunkettle STC

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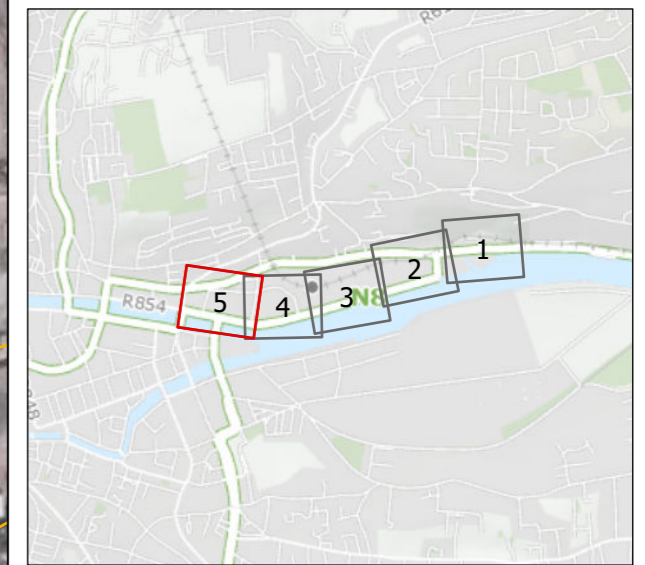
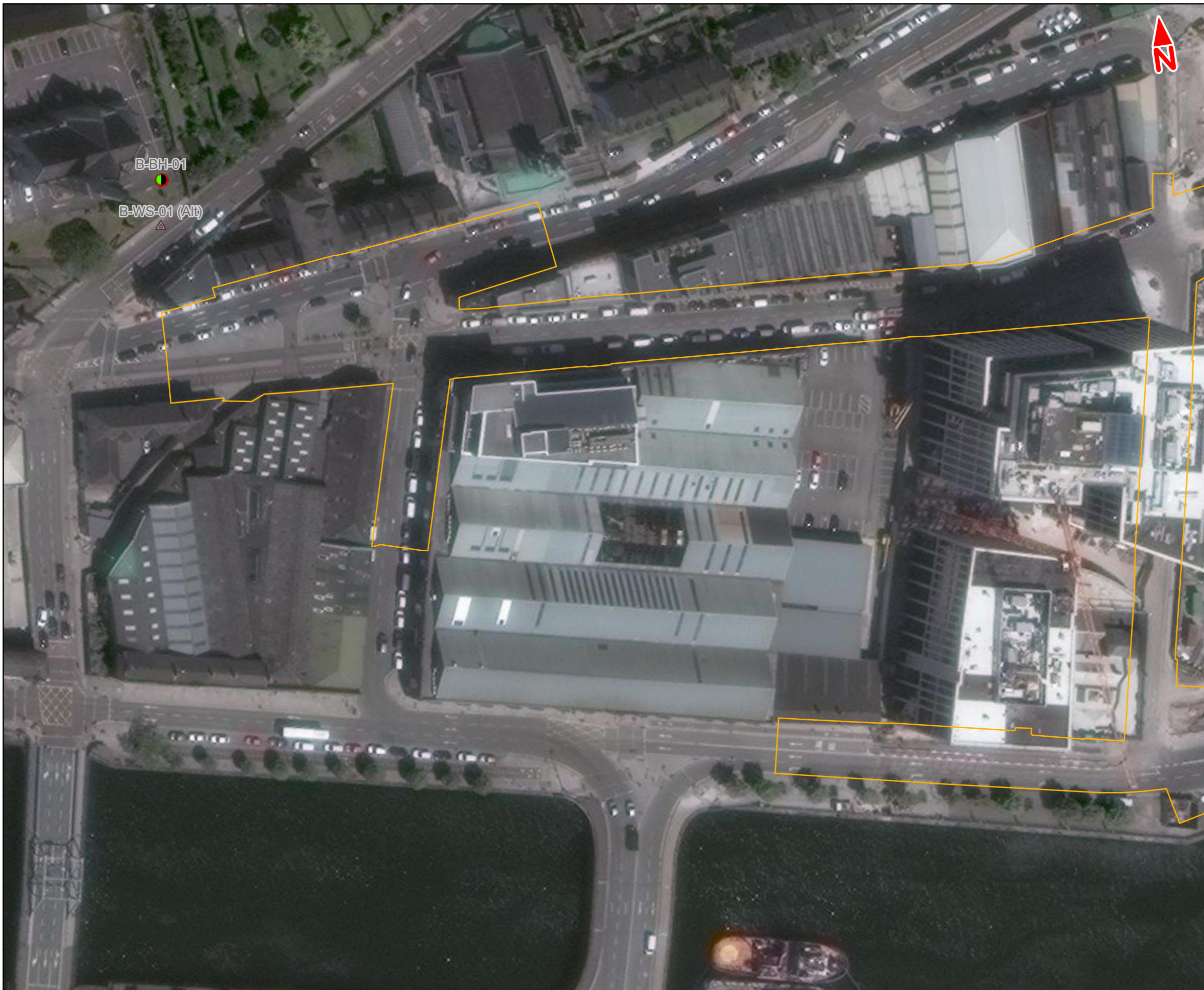


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Scheme Title			
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DUNKETTLE STC: PROPOSED GROUND INVESTIGATION PLAN			
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Phase	03	Rev	-

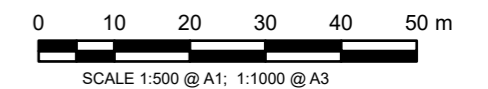
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Legend:

- Dunkettle STC
- Cable Percussive With Rotary Follow-On
- ▲ Window Sampler

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Scheme Title			
CORK CITY NORTH SUSTAINABLE TRANSPORT CORRIDORS SCHEME			
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Drawing File Name	BCCA-3-JAC-X-ERW-DR-W-0045	Sheet Number	5 of 5
Phase	03	Rev	-

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